

ABSTRACT OF THE DISCLOSURE

The present invention is directed to a point-of-use water treatment system (WTS) unit (20) for filtering and treating contaminants in water. WTS unit (20) may include a first primary coil (74) located in a base unit (22) which inductively power a secondary treatment device such as a UV lamp assembly (24). A filter assembly (26) is used which has a filter block (90) and an inner sleeve (92) which extends inside filter block (90). Inner sleeve (92) defines a chamber in which the secondary treatment device (24) may be disposed. First and second valves and seals may be interposed between the filter assembly (26), secondary treatment device (24) and base unit (22) to allow the filter assembly (26) and secondary treatment device (24) to be independently replaceable. Secondary treatment device (24) may be a lamp assembly (24) which includes a condensing element (84) to condense mercury in a bulb in the arc path between filaments (444). Maintaining the condensed mercury between filaments (444) serves to reduce the time needed for lamp assembly (24) to produce light emissions of a predetermined intensity upon subsequent energization as compared to allowing the mercury to condense outside the arc path. A reflector assembly (402) may be used in lamp assembly (24) to focus radiation upon conduits (80) carrying water therethrough and away from returning to a bulb assembly (82) from which the radiation was originally emitted. An outer enclosure or housing (400) surrounds the bulb and reflector assemblies (82, 402) such that lamp assembly (24) becomes a generally closed pressure vessel. Also, a light pipe (250) impregnated with a florescent dye may be used to convert UV light into visible light for ease of monitoring the light output intensity of lamp assembly (24). Light pipe (250) also serves as a filter to primarily emit light of a particular wavelength (green) while significantly inhibiting light transmission through light pipe (250) of other wavelengths.